

P. WARNER.  
Grain-Separators.

No. 158,549.

Patented Jan. 5, 1875.

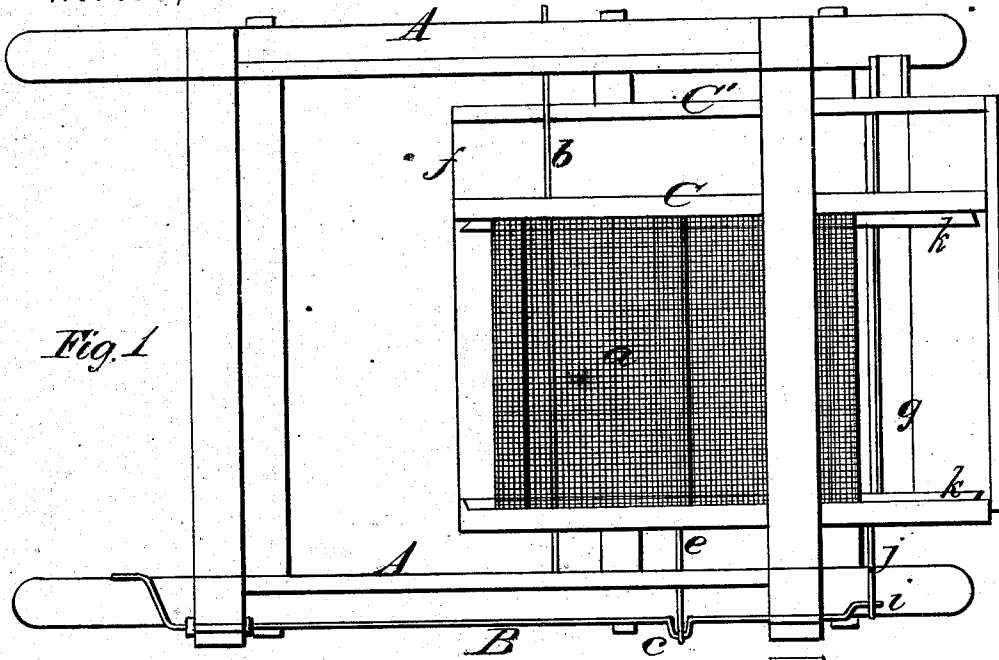


Fig. 1

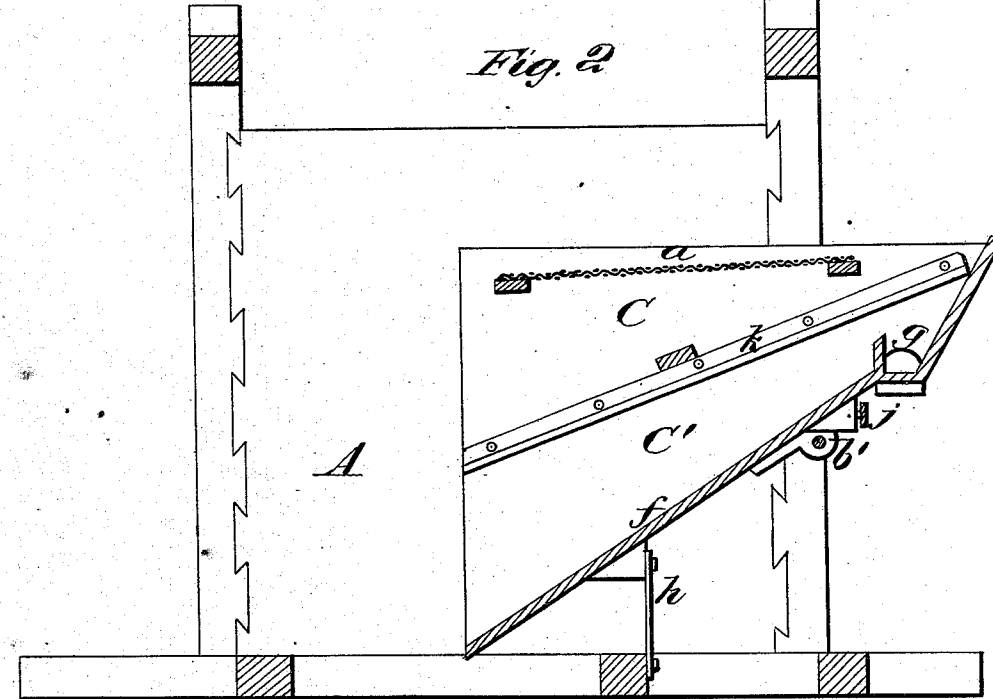


Fig. 2

WITNESSES  
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# UNITED STATES PATENT OFFICE

PETER WARNER, OF GILEAD, MICHIGAN.

## IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. 158,549, dated January 5, 1875; application filed November 28, 1874.

*To all whom it may concern:*

Be it known that I, PETER WARNER, of Gilead, in the county of Branch and State of Michigan, have invented a new and valuable Improvement in Balance-Shoes for Thrashing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a plan view of my device, and Figs. 2 and 3 are sectional views of the same.

This invention has relation to the shoes of thrashing-machines, clover-hullers, fanning-mills, and other separators; and the nature of my invention consists in a divided shoe, each section of which is supported and guided by horizontal rods, and driven by means of a single crank-shaft, in such manner that they receive alternate reciprocating motions in opposite directions, for the purpose of balancing the motions, and thereby preventing vibration of said crank-shaft, as will be understood from the following description.

In the annexed drawings, A designates the frame of a fanning-mill, thrashing-machine, or other like machine, which frame may be constructed in the usual well-known manner. B designates the driving-shaft, which gives motion, to the two sections C C', constituting the screening-shoe. The shoe-section C, with its riddle *a*, is supported by means of horizontal rods *b b*, extending transversely across the frame A, and to this section lateral motion is

given by means of a crank, *c*, and a connecting-rod, *e*. The shoe-section C', with its inclined imperforated bottom *f* and laterally-discharging trough *g*, is supported at its upper end by means of a guide-rod, *b'*, and at its lower end by means of straps *h h*, which are pivoted, respectively, to the shoe-section C' and to one of the sills of frame A. This lower shoe-section C' receives lateral motion from the shaft B by means of a crank, *i*, and a connecting-rod, *j*. The crank *i* is so arranged with respect to the crank *c* on the same shaft that the shoe-sections will run in opposite directions, thereby balancing the forces on shaft B, and preventing undue vibration of this shaft when running the machine rapidly.

To prevent discharging any of the grain over the sides of the lower shoe-section, C', I make this section wider than the upper section, and apply to the inner sides and near the lower edges of this lower section inclined ledges *k*, which will direct the falling grain inwardly into the shoe C'.

What I claim as new, and desire to secure by Letters Patent, is—

A shoe which is composed of sections C C', supported on rods *b b'*, and reciprocated in opposite directions from crank-shaft B, as described, the upper section being provided with inclined ledges *k*, for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

PETER WARNER.

Witnesses:

M. MORRILL,  
PATRICK KEHOE.